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Thinking skills and geography

Aim of this book

The aim of this publication is to make more explicit the place of thinking skills in the teaching and learning of geography and sustainable development for children aged 5 to 11 years, and to demonstrate how this relates to the achievement of the aims of the school curricula in all the countries of the UK.

Thinking skills underpin good primary practice in all subject areas. Promoting these skills helps to empower young children to become independent learners and to prepare them for taking up their role as well informed, constructively critical citizens. They are essential to education for sustainable development (ESD), which in the last few years has been integrated into the curricula of all UK countries in varying ways, as awareness of our global links and responsibilities has permeated our collective consciousness.

‘...[the school curriculum] should develop their awareness and understanding of, and respect for, the environments in which they live, and secure their commitment to sustainable development at a personal, local and global level.’

The National Curriculum: Handbook for primary teachers in England, 2000

Thinking skills

Information processing skills

- Locating and collecting relevant information
- Sorting
- Classifying
- Sequencing
- Comparing and contrasting
- Analysing relationships

Reasoning skills

- Giving reasons for opinions and actions
- Drawing inferences
- Making deductions
- Explaining what they think
- Making judgements, informed by reasons and evidence

Enquiry skills

- Asking relevant questions
- Posing and defining problems
- Planning what to do
- How to research
- Predicting outcomes
- Anticipating consequences
- Testing conclusions
- Improving ideas

Creative thinking skills

- Generating and extending ideas
- Suggesting hypotheses
- Applying imagination
- Looking for innovative outcomes

Evaluation skills

- Evaluating information
- Judging the value of what the learner reads, hears and does
- Developing criteria for judging the value of their own and others’ work or ideas

The study of geography enables children to develop a range of thinking skills, particularly those needed to develop an understanding of sustainable development. Children can be encouraged to use their thinking skills to:

- study places from local to global to explore the interdependence of society, economy and the natural environment;
- study how people are influenced by, and affect environments;
- develop a sense of responsibility for personal and group action;
- develop an appreciation of the need for sustainable use and management of resources for present and future generations;
- be able to listen carefully to arguments from different viewpoints.

Reference: *Lessons in Life: Resources for primary school teachers* Published by Shell Education Service for project partners (CEE, Field Studies Council, SEEC; WWF-UK)

'In 1987 the United Nations Brundtland report to the World Commission on Environment and Development defined sustainable development as:

"Development which meets the needs of the present without compromising the ability of future generations to meet their own needs".'

Key concepts of Education for Sustainable Development

Interdependence

Understanding how people, the environment and the economy are inextricably linked at all levels from local to global.

Citizenship and stewardship

Recognising the importance of taking individual responsibility to ensure the world is a better place.

Needs and rights of future generations

Understanding our own basic needs and the implications of actions taken today on the needs of future generations.

Diversity

Respecting and valuing both human diversity – cultural, social, economic – and biodiversity.

Quality of life

Acknowledging that global equity and justice are essential elements of sustainability and that basic needs must be met universally.

Sustainable change

Understanding that resources are finite and that this has implications for people's lifestyles, and for commerce and industry.

Care and caution

Acknowledging that there is a range of possible approaches to sustainability and that situations are constantly changing, indicating a need for flexibility and lifelong learning.

Reference: A Report to DfEE/QCA from the panel for Education for Sustainable Development, 14 September 1998
Down to Earth: A Scottish perspective on sustainable development. February 1999

Activity ideas

The following chapters are based on units from the schemes of work to support the English National Curriculum for geography, but the themes are generic and the examples of activities to engage children in the development of thinking skills can be adapted to meet the particular needs of pupils and teachers throughout the UK. Most of these activities will be familiar to teachers and will already form part of more extended schemes of work. However, the purpose here is to highlight relevant thinking skills in the process of extending children's knowledge and understanding.

Tips and suggestions

You might find it useful to refer to these as you work through the activity ideas.

Thinking skill strategies

Brainstorming

Brainstorming is a technique that helps to release and record creative thoughts. Here are some tips for successful brainstorming.

- Keep the objective simple and clearly focused.
- Make sure the children are clear about the subject/purpose of the session.
- Keep it short; five to ten minutes is long enough.
- Record everything.
- Do not make judgements about ideas – they are all useful.
- Encourage lateral thinking and unusual ideas.
- Small group sizes of about five are ideal, but brainstorming with a whole class can work well; for example, at the start of a project to find out what the children already know, what they want to find out and how they might set about this.

Brainstorming is a particularly useful technique for getting children to formulate questions. Use the examples of questions in the Enquiry and Fieldwork section on the facing page to provide the children with a framework for formulating their own questions.

Circle time

Circle time is simply a way of structuring class discussion time. It can be used for many purposes, including helping children develop their thinking skills and express their ideas and feelings in a non-threatening environment.

Here are a few ground rules:

- Everyone's position is equal.
- It is a time for children's own concerns.
- Everyone has a responsibility to listen and an opportunity to speak.
- Exclusion from circle time is not used as a sanction for previous bad behaviour, since this affects the children who need this experience the most.
- Children have a right to 'pass'. There is no pressure to speak but those who do are listened to without ridicule.
- Children who choose not to speak should be no less valued than those who do. Circle time may deal with challenging issues but it is not a test.
- Circle time becomes motivating because it is child-centred and personally relevant. Taking part is its own reward and praise for speaking introduces a pressure to perform.

Circle time can help children develop responsible rather than conformist behaviour. It provides a model for a more equal society.

Source: www.circletime.co.uk

Plenary sessions

If children have been working in groups it is helpful to bring them together to discuss what they have been doing. The natural time for this is when the children have completed a specific task, but it can also be a useful technique for refocusing an activity. A plenary session enables children to:

- summarise what they have learned;
- share this learning;
- check that they have been on task, ie that they understood the original task or brief;
- raise questions about what they have learned;
- agree what they need to do, or find out, next.

Specific geography skills and tools

Graphicacy

Graphicacy is a key geography skill focused on the use of maps. Photographs and aerial photographs, compasses, the Internet and ICT packages can also be used.

Graphicacy tasks, progressively, may include:

- children placing toys in the correct positions on a play mat; for example, car in garage or fire engine in fire station;
- making a track map of, say, a model railway, then drawing it;
- using a local map to plot the route to school and adding features observed;
- alpha-numerical referencing of home, school and other known features on a map;
- sequencing photographs on a map, for example those of a river from source to mouth;
- plotting directions and distances, for example schools in the netball league;
- using four figure and six figure Ordnance Survey grid references for other schools;
- orientating maps to north in the school grounds, and making signpost map of features;
- using maps and compasses in orienteering exercises in and beyond the school grounds;
- map reading and annotating simple fieldwork sketches, using symbols, key, scale and so on.

Source: Chapter 7 (Peter Bloomfield and Bernice Rawlings)
Excellence in Education 2001 – The Primary School Curriculum
 ed Brundrett M et al. Publisher: Peter Francis

Enquiry and Fieldwork

These are essential learning tools in geography. Fieldwork seeks to explain and make sense of the real world and help children see the wonder and beauty of the world around them.

The fundamentals of geographical enquiry include:

- providing resources such as maps, aerial photographs, newspaper articles and audio-visual materials;
- providing fieldwork opportunities with appropriate enquiry tasks;

- setting tasks that stimulate investigation by using key words and questions to promote investigation, such as:
 - Why do people park in these roads?
 - How is the coast used in this area?
 - When is the park used; is it all day, every day of the year?
 - What do the map and the photographs tell us about how the land was used?
- higher order thinking, which can be promoted by such questions as:
 - What if the school wanted to build some new classrooms over the pond and the corner of the football pitch?
 - When would you think it was all right to cut down the forests?

Source: *ibid*

The local area

Objective

- To use thinking skills to explore what children like and dislike about their local environment.

Resources

- Photographs and pictures of the local area
- A good clear local map (for example, from your local authority or an estate agent). Enough copies for each child and an enlargement for display purposes
- Digital camera(s) for the children
- Clipboards and drawing equipment
- Research on the route to be taken by the children

Around our school

Introduction

Most young children begin to develop their geographical skills, knowledge and understanding by exploring local environments. This activity idea highlights how thinking skills are implicit in this familiar early introduction to geography.

Tell the children that they are going to find out and discuss what their local area looks like.

Information processing skills

- Give groups of children a number of pictures of your local area to work with. Do they know where these pictures were taken? Organise a walk around the area to see how many of the places illustrated they can locate.
- Help the children to take their own photographs of places and buildings along the route, such as a church, postbox, interesting gateway and overflowing litter bin!
- Back in class, trace the journey on the enlarged map and make a display to show where all the pictures, including those taken by the children, fit on the map.

Enquiry skills

- Brainstorm questions the children would like to ask about the pictures. For example:
 - Is this church (old parish church) older than the church near the shops (new church)?
 - Who collects the litter?
 - What building might have been behind the old gateway? Are there any clues?

(For more information and ideas on brainstorming see pages 6 and 7.)

- Add these to the display.
- Talk about how the children might find answers to their questions. Whom could they ask? Perhaps a local resident, shopkeeper, neighbour or relative who has lived there a long time. Where could they look for information? The local library or museum, the town hall or guidebooks on the locality. Invite someone to the classroom to talk to the children and answer their questions.

Reasoning skills

- Ask the children to sort the pictures under different headings, such as:
 - what happens there (home, shop, public building/space)
 - which pictures they like/dislike ('I like the pattern the bricks in the wall make,' and 'I don't like the shopping centre because it is noisy and people drop litter.' Sensitivity is needed if the area covered includes any child's home.)
- Can the children explain why they have sorted the pictures in the way they have?



Evaluation skills

- Hold a circle time plenary session with the whole class in order to review children's likes and dislikes about their local area, and how these feelings might have changed in the course of their work. Give each child an opportunity to talk about a picture. How does it make them feel? Happy, excited, sad, annoyed, angry, puzzled and so on? Do any of the other children agree? Invite other opinions and let the children discuss them.



Links with the Geography Scheme of Work

This activity has direct links with Unit 1, 'Around our school – the local area'. In particular it addresses the learning objectives 'What can we see in the streets around our school?' and 'What are our immediate surroundings like?'

ESD focus

This activity helps children to begin to develop their role as citizens. They are encouraged to express their likes and dislikes about their immediate environment in preparation for developing informed opinions about looking after and improving it.

The local area

Objective

- To use a range of thinking skills to investigate the features of a park.

Resources

- Activity Sheet 1 (page 46)
- Photos of your local park

A trip to the park

Introduction

A study of the school environment could be extended to a study of a specific local environment, such as a named street or the local park. Taking the children to a local park is the ideal, but if this is impractical use the illustration of the park provided on page 46, or take some photos of your local park to use as a focus for the development of thinking skills. The following activity ideas are based on the illustration, but they can be adapted for a visit to a real park.

Enquiry skills

- Before you show the children the illustration or photos of a park, use questions such as the following to elicit what they already know:
 - What do you know about parks?
 - Who goes to a park?
 - What would you like to find out about your local park?
 - What facilities might be there? (Café, toilets.)
 - What might be available for children to use?
 - Are there any sporting activities undertaken in the park?

Information processing skills

- Organise the children into small groups and give each group a copy of the illustration of a park or the photos of your park. Ask them to write down what they can see; for example that there are trees, flowers, animals, birds, people, buildings, play equipment, pond and paths. What are the people in the park doing? (Playing games, sitting, walking, and so on.)
- Ask the groups to discuss the differences and the similarities between the illustration and a park in their local area. If you are using photos of the local park show them the illustration at this stage and ask what similarities and differences they can see. What can they see in the illustration that is not in their park? What is in their park, but not in the illustration? What is in both?
- Ask the children to make a plan of one of the parks (the illustrated one or the one they know), indicating all the main features, such as paths, pond, play area and benches.

Reasoning and information processing skills

- Extend the children's observations by asking them questions such as:
 - Do you think this park is suitable for your family?
 - Do you think this park is suitable for everyone's family?
 - What features should be there for different groups of people – young children, teenagers or old people? Why?
 - How could you find out about what the park offers for these different groups?
 - How would you record the information?



Reasoning and creative thinking skills

- Ask the children to have another close look at the illustration. Hold a plenary session to elicit what they have found out about the main features of this park. What do these features tell them about who uses the park, how it is used and when? Can they suggest reasons for the similarities and the differences between this park and their local park?
- Ask them to draw a picture to show how they would improve this park.



Links with the Geography Scheme of Work

This activity has direct links with Unit 1, 'Around our school – the local area'. It provides a specific focus for the learning objectives 'What are our immediate surroundings like?' and 'How do people spend their leisure time?'

ESD focus

This activity helps children develop their role as active citizens. Here the emphasis is on appreciating the differing needs of people within their community and how these can be best met.